SPECTRAL SIGNATURES OF NON-ADIABATIC DYNAMICS

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Non-adiabatic interactions between molecular electronic states give rise to a wide range of spectroscopic phenomena: e.g. perturbations of energy levels, intensity stealing in forbidden transitions, wide amplitude dynamics on multiple potential surfaces, quantum interference, the opening of dissociation pathways, and the control of the resulting energy disposal. This paper will illustrate some of these signatures, with particular attention to studies using high resolution photofragment translational spectroscopy. In small polyatomic molecules, such as HCO and H_2O, the effects of non-adiabatic surface crossings appear in the rotational behaviour, but in the vibrational behaviour for larger molecules such as pyrrole and phenol.

R.N.Dixon. *Chemical Society Reviews*, **23**, 375, 1994.
R.N. Dixon, D.W. Huang, X.F. Yang, S. Harich, J.J. Lin and X. Yang. *Science*, **285**, 1249, 1999.
B. Cronin, M.G.D. Nix, A.L. Devine, R.N. Dixon and M.N.R. Ashfold. *Phys. Chem. Chem. Phys.*, **8**, 599, 2006.